

NeoGen AR Nail System

Proximal Femoral Anti-rotation Nailing System



LESS
IS MORE

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Warning:

This description is not sufficient for immediate application of the instrumentation. Instruction by a surgeon experienced in handling this instrumentation is highly recommended.

INTRODUCTION

AR nail short (Length 170 mm, 200mm, 240 mm)

Indications

- Intertrochanter fracture(31-A3)
- High subtrochanteric fractures(32-A1)
- Pertrochanteric fracture(31-A1 and 31-A2)

Contraindications

- Low subtrochanteric fractures
- Femoral shaft fractures
- Isolated or combined medial femoral neck fractures

AR nail long(Length 320 mm-440 mm)

Indications

- Low and extended subtrochanteric fractures
- Ipsilateral trochanteric fractures
- Combination fractures (in the proximal femur)
- Pathological fractures

Contraindications

- Isolated or combined medial femoral neck fractures

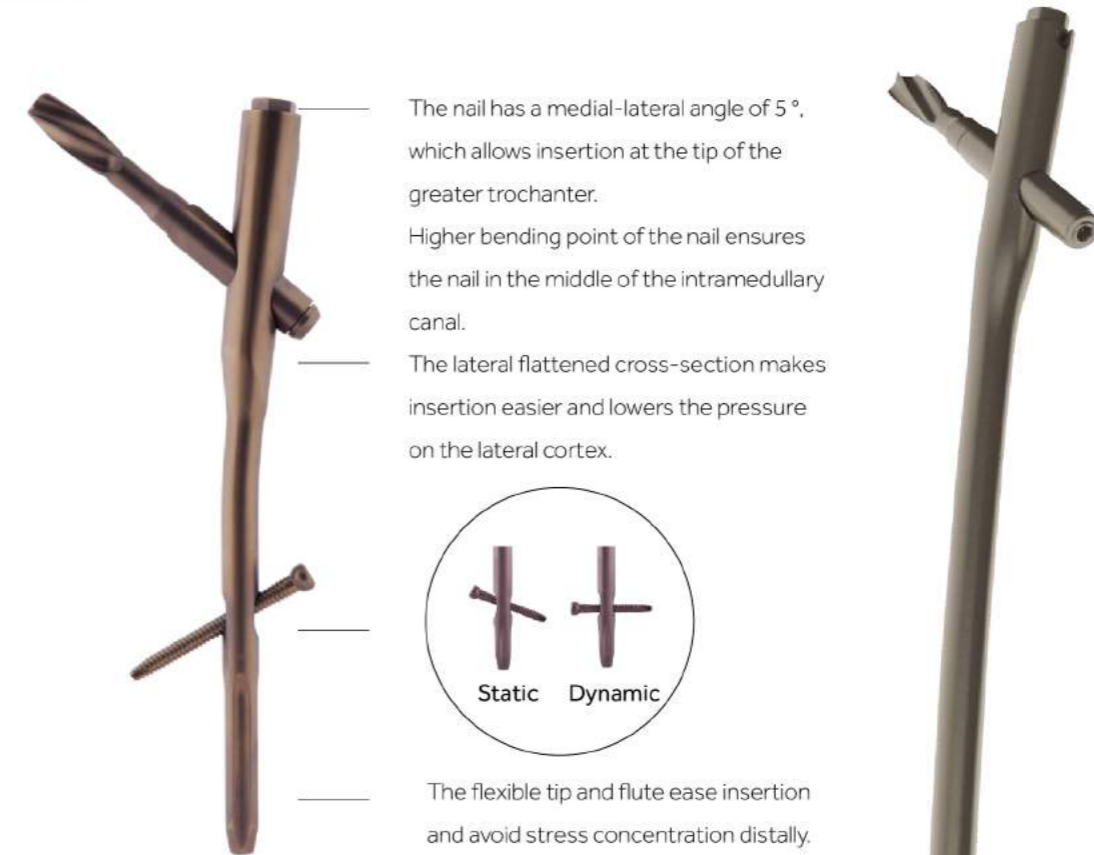
AR blade

- Inserting the AR blade compacts the cancellous bone. This form of self-stabilisation is especially advantageous in osteoporotic bone.
- The large surface area of the blade covers its whole length giving the best possible anchoring in osteoporotic bone.
- The increased stability caused by bone compaction around the blade has been biomechanically proven to retard rotation and varus collapse.



INTRODUCTION

AR nail



Specifications

- Proximal diameter:16.5mm
- Proximal bend: 5°
- CCD angle:130°
- Material: Titanium Alloy
- Distal diameter of short nails:
9.3mm (4.5mm distal locking screw)
10mm, 11mm, 12mm (5.0mm distal locking screw)
Length of short nails: 170mm, 200mm, 240mm
- Distal diameter of long nails:
9.5mm, 10mm (4.5mm distal locking screw) 11mm, 12mm (5.0mm distal locking screw)
Length of long nails: 320mm-440mm with 20mm increment
Left and Right



SURGICAL STEPS

Preoperative Planning

Estimate the CCD angle, diameter and length of the nail.

■ **Note:**

When determine diameter of the nail, surgeons should consider the diameter of medullary cavity, fracture line, bone anatomy shape and postoperative recovery.

Open Femoral Medullary Cavity

1. Patient Positioning

Position the patient supine on an extension table or a translucent operating bed. Abduct the unaffected leg as far as possible and place it on a leg support, so that it allows free fluoroscopic examination. This should be tested preoperatively.

For an unimpeded access to the medullary cavity, abduct the upper body by about 10°–15° (or adduct the affected limb for 10°–15°).



2. Fracture Reduction

The fracture should be closed reduction under C-arm. If the closed reduction is not satisfied, choose open reduction.

■ **Note:**

Accurate anatomical reduction and fixation of the patient's broken limb to the operation bed can simplify the reduction process and get ideal results.

SURGICAL STEPS

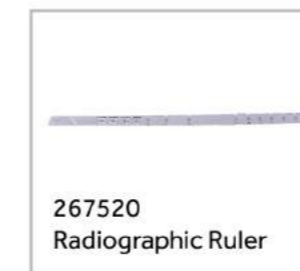
3. Nail Diameter And Length Choosing

After fracture reduction, surgeons should decide nail diameter.

Place the C-arm upon proximal femur. Use long clamp to put Radiographic Ruler (267520) on lateral femur paralleled.

Move the C arm to the distal part, check fracture reduction situation from AP view. Read the length of nail on the Radiographic Ruler directly.

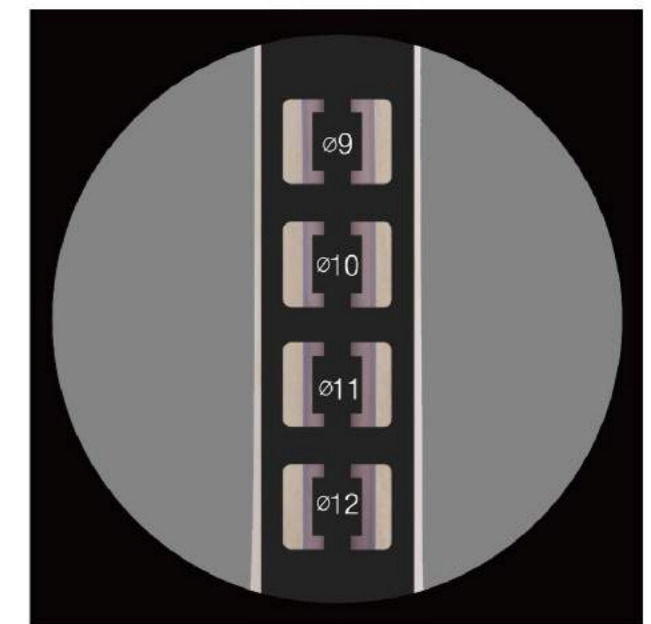
Instrument



■ **Note:**

- The diameter showed on the radiographic ruler is estimated because the femoral diameters are different on every portion.
- Choose the nail of diameter as large as possible to fit the medullary cavity.
- Place the pane of the radiographic ruler on the isthmus. If the pane doesn't cover both sides cortices, the corresponding diameter is acceptable.
- If the reamed technique is used, the diameter of the largest medullary reamer applied must be 1 mm larger than the nail diameter.
- Always choose the largest diameter nail that fits into the intramedullary canal (9.3mm short nail and 9.5 mm long nail should only be used for an intramedullary canal smaller than 11 mm).
- If the fracture line is lower than smaller trochanter, long nail is recommended.

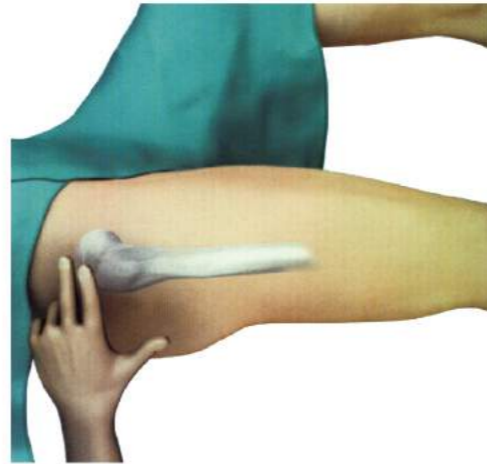
The length of long nail should be the same as the femoral length. It is not recommended to use long nail which just surpasses the fracture line on the femoral shaft.



SURGICAL STEPS

4. Operative Approach

Palpate the trochanter major.
Make a 5 cm incision proximal from the tip of the great trochanter. Make a parallel incision of the fasciae of the gluteus medius and split the gluteus medius in line with the fibers.



5. Determine Entry Point

In AP view, the entry point is usually on the tip or slightly lateral to the tip of the greater trochanter at angle of 5° to the extension of the medullary cavity.
In lateral view, the entry point should be in the centre of the medullary cavity.



6. Insertion Of Guide Wire

Keynote:
Guide Sleeve only collocates with Protection Sleeve.
Place Protection Sleeve (269460) and Guide Sleeve 17 (269470) on the entry point and insert Tip Threaded Guide Wire, 3.2 mm (267390) then remove power drill and guide sleeve.

Note:
The Guide Wire should be inserted into femoral medullary cavity at least 15cm. Correct entry point and angle are essential for a successful result. To ensure the correct position of the Guide Wire, position a Guide Wire ventrally on the femur and check by C arm.

Instrument



SURGICAL STEPS

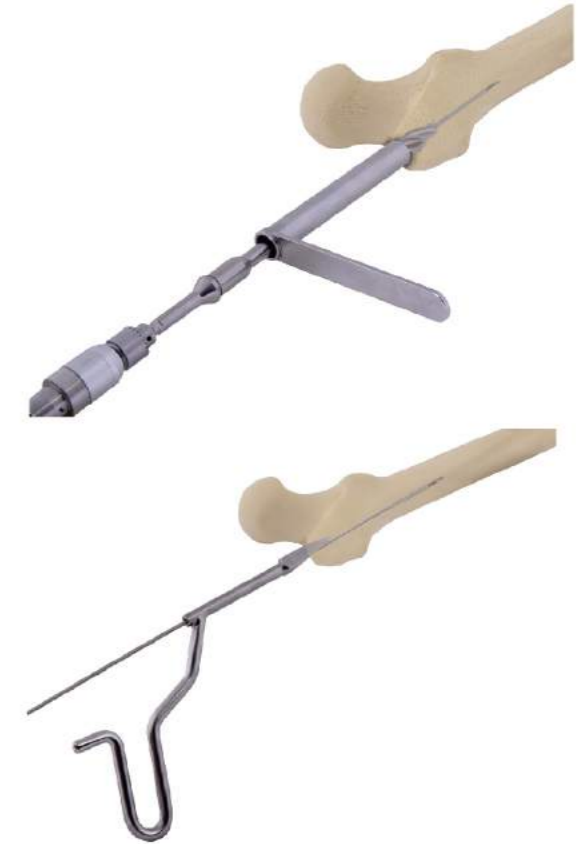
7. Opening Of Femur Medullary Cavity

Keynote:
Entry Reamer, 17.0mm (269450) only collocates with Protection Sleeve (269460).

Guide Entry Reamer, 17.0mm (269450) through Protection Sleeve (267100) over Tip Threaded Guide Wire, 3.2 mm (267390) and drill as far as the Entry Reamer stops. Remove Entry Reamer, Protection Sleeve and Threaded Guide Wire.

Note:
It is recommended to open the femur by power tool at high speed or carefully by hand. To prevent dislocation of the fracture fragments, avoid lateral movements or excessive compression forces.

Alternative methods
Open the femur medullary cavity by Cannulated Awl
Rotate the Cannulated Awl (267530) over Tip Threaded Guide Wire, 3.2 mm (267390) to open medullary cavity. Remove the Cannulated Awl and Threaded Guide Wire.



Instrument



SURGICAL STEPS

8. Reaming For Long Nail

Reaming is necessary for long nail insertion.

After opening of femur medullary cavity, insert the Reducer (269200) through Protection Sleeve (267100) to reduce the fracture to prepare the working channel for long nail. Use Guide Wire Holder (269240) to insert the 269190 Ball Tip Guide Wire 2.5 through the Reducer. Once the Ball Tip Guide Wire reaches the distal femoral condylar, remove the Reducer and keep the Protection Sleeve at its original position.

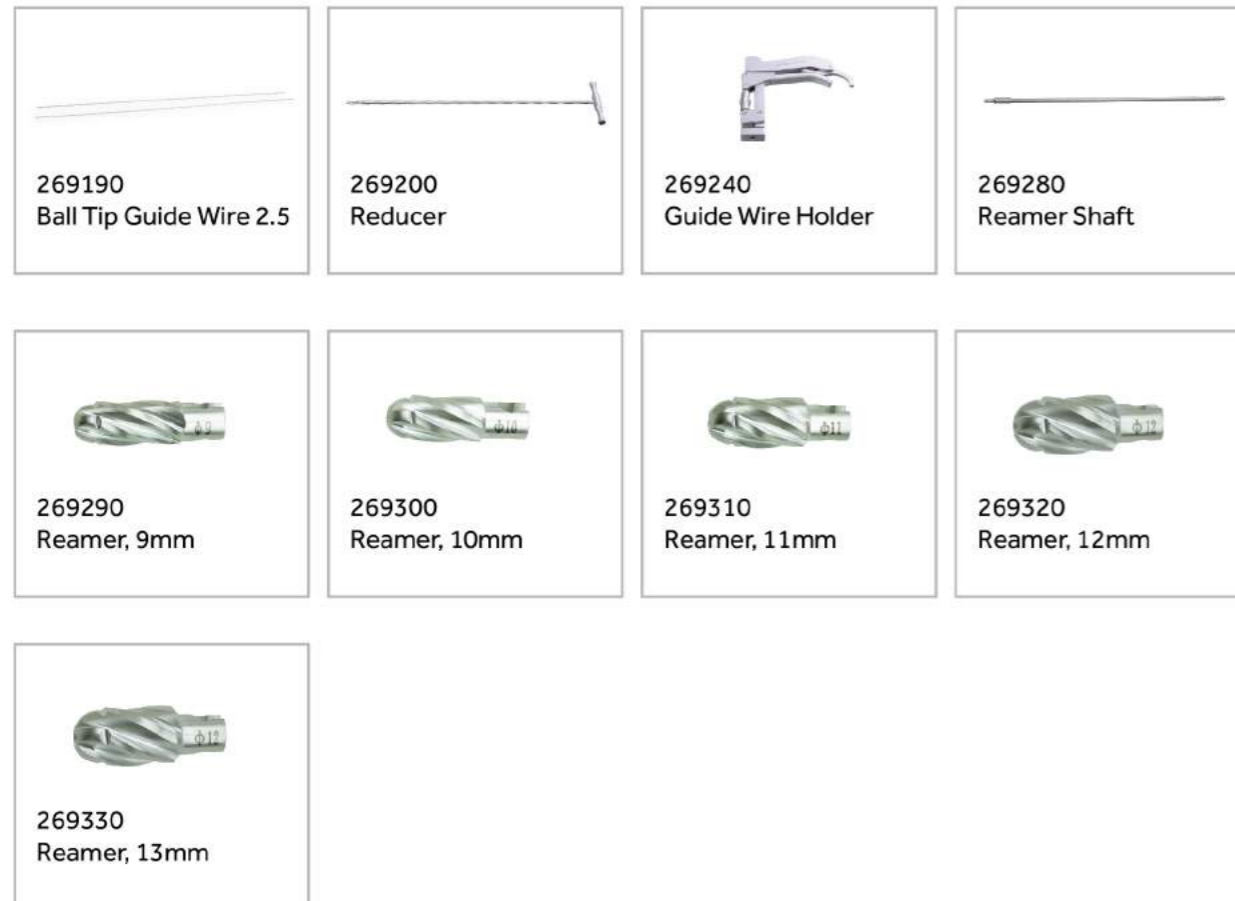
Connect the Reamer Shaft (269280) and Reamer. Insert the Reamer through Protection Sleeve over the Guide Wire. Starting with 9mm Reamer head, ream to a diameter of 0.5mm to 1.5mm larger than the chosen nail diameter. Advance the reamer with steady, moderate pressure. Do not force the reamer. Partially retract the reamer repeatedly to clear debris from the medullary canal.

Optional method for surgeons to decide the nail diameter:

If the surgeon feels the Reamer touching the femoral cortexes, he can choose the nail of 1mm-1.5mm smaller than diameter of Reamer applied.

Remove Reamer Shaft and the Reamer but keep the Guide Wire in the femur medullary cavity for long nail insertion.

Instrument



SURGICAL STEPS

Nail Insertion

1. Assembly

Guide Connecting Screw (269420) through Insertion Handle (269400) and secure the nail to the Insertion Handle using Screwdriver (267240), hexagonal with spherical head.

■ Note:

Ensure that the connection between nail and insertion handle is tight to avoid deviations when inserting the blade through the insertion handle. Do not attach the aiming arm yet.

Instrument



2. Insertion Of The Nail

Use C-arm control to insert the nail.

Carefully insert the nail manually as far as possible into the femoral canal. Slight twisting the Handle helps insertion. If the nail cannot be inserted, select a smaller size nail diameter or ream the medullary cavity to a diameter that is at least 1 mm larger than that of the selected nail.

The correct nail insertion depth is reached, as soon as the projected blade is positioned in the lower half of the femoral neck.

Placing a ruler on the AP view allows checking the position of the blade. A too cranial or too caudal nail position should be avoided as it can lead to malposition of the blade.

The anteversion can be determined by inserting a Guide Wire ventral to the femoral neck. In the mediolateral view, place the Insertion Handle parallel to the Guide Wire to align the correct rotation of the nail.

Remove Guide Wire. Don not reuse, but dispose of the Guide Wire.

■ Note:

Always ensure that the nail is firmly attached to the Insertion Handle. Avoid unnecessary use of force to prevent loss of reduction or an iatrogenic fracture.



SURGICAL STEPS

Attach the Insertion Connector (267130) on the Insertion Handle and secure Insertion Connecting Rod (267120) and Insertion Connector (267130). Use the Hammer (267450) to blow on the Connector to insert the nail. Remove the Insertion Connecting Rod and the Insertion Connector.

Long nail should be inserted over Ball Tip Guide Wire but short nail shouldn't. Remove the Ball Tip Guide Wire when long nail is inserted appropriately to ensure it does not affect the following steps.



Instrument



AR Blade Insertion

1. Assemble Aiming Arm

Mount the appropriate Aiming Arm 130° (269410) for Static Locking and fix it firmly to the Insertion Handle with Bolt for Aiming Arm 130° (267140).



Instrument



SURGICAL STEPS

2. Preparation Of The Wire Insertion

Firmly secure Buttress Nut (267460) to Protection Sleeve (267150) for AR Blade. Rotate the Buttress Nut until it reaches the mark on the Protection Sleeve.

Insert Trocar Sleeve 3.2 (267160) and Trocar, Φ 3.2mm (267170) through the Protection Sleeve.



Instrument



3. Guide Wire Insertion

Advance the entire sleeve assembly for AR blade through the Aiming Arm to the skin. Make a stab incision in the area of the Trocar tip. Advance the sleeve assembly through the soft tissues in direction of the lateral cortex until clicks into the Aiming Arm.

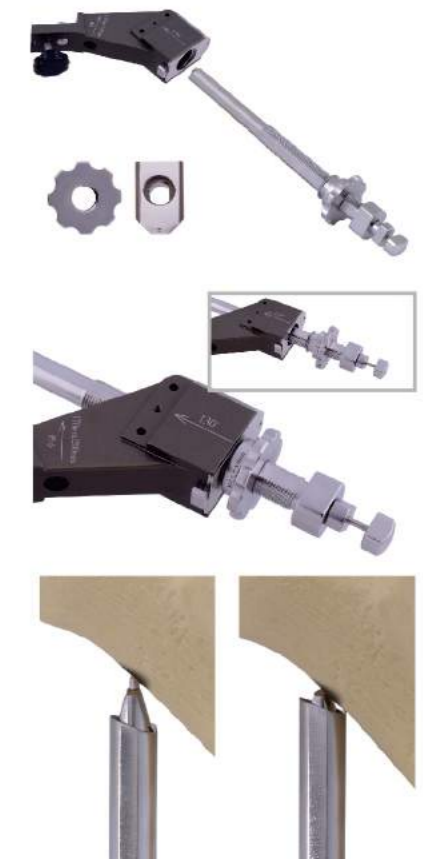
■ Note:

Ensure that the sleeve assembly clicks into the Aiming Arm. This will ensure the accurate position of the AR blade.

Insert the sleeve assembly as far as the lateral cortex. Advance the protection sleeve to the lateral cortex using slight clockwise turns of the buttress nut.

■ Note:

The sleeve assembly must be in contact with the bone before insertion of the blade. Do not tighten the buttress nut too firmly as this could impair the precision of the insertion handle and sleeve assembly.



SURGICAL STEPS

Remove the Trocar. Insert a Tip Threaded Guide Wire, 3.2 mm (267390) through the Trocar Sleeve. Check the position and direction at AP and ML view under C-Arm. In the AP view, the position of Guide Wire should be in the lower half of the femoral neck and in the ML view, the Guide Wire should be in the center of femoral head. Insert the Guide Wire into the femoral head, but at a distance of least 5mm below the joint level.

Note:

It is acceptable if the Guide Wire is a little lower and posterior, as the bone quality at this area is relatively good and the AR blade has better anti-rotation performance than single hip screw.

Instrument

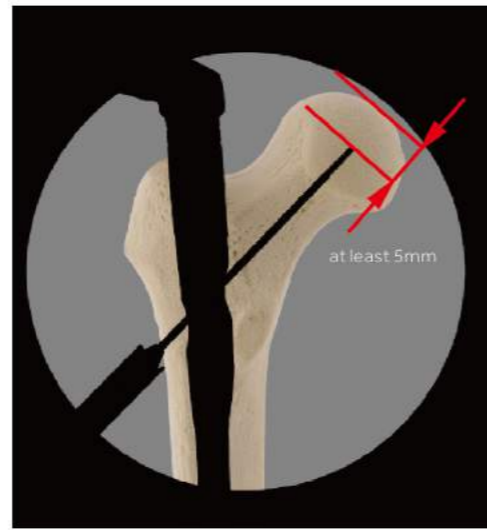


4. Measuring Of AR Blade Length

Verify the position of the Guide Wire in AP and ML view before measuring the length. Advance Direct Measuring Device (267180) to the Protection Sleeve over the $\Phi 3.2$ Guide Wire and read the length.

The AR blade tip should be 10mm to 15mm below the joint level. The tip of Guide Wire is 5mm below the joint level so the length of AR blade should be 10mm deducted from the measuring reading. Remove the Direct Measuring Device and Trocar Sleeve.

Instrument

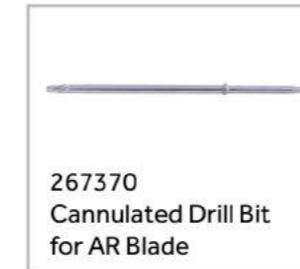


SURGICAL STEPS

5. Opening Of Lateral Cortex

Push the Cannulated Drill Bit (267370) for AR Blade over the $\Phi 3.2$ Guide Wire. Drill to the stop to open the lateral cortex.

Instrument



6. Drill hole For AR Blade(Optional)

Important: Use reamer only in a situation with good bone quality.

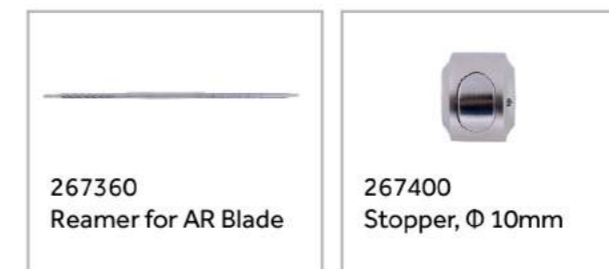
Set the chosen blade length on the Reamer (267360) for AR Blade by fixing the Stopper, $\Phi 10$ mm (267400) in the corresponding position. Read off the correct length on the side of Stopper pointing towards the tip of the Reamer. Push the Reamer for AR Blade over the $\Phi 3.2$ Guide Wire and drill to the stop. The Protector prevents further drilling.

Note:

The Reamer is only to be used on good quality bone. For elderly people or people with osteoporotic bone, do not use Reamer.

The Reamer is only to be used after the lateral cortex is opened. If the $\Phi 3.2$ Guide Wire has been bent slightly during insertion, guide the Reamer over it using careful forward and backward movements. However, if the $\Phi 3.2$ Guide Wire has been bent to a greater extent, reinsert it or replace it by a new Guide Wire. Otherwise, the reamer tip will intrude into joint.

Instrument



SURGICAL STEPS

7. Assembly Of AR Blade And Screwdriver

The AR blade is supplied in a locked state.

Attach the AR blade to the Screwdriver for AR Blade (267350) : Use slight anti-clockwise pressure (<attach> marking on the handle) to insert the Screwdriver for AR Blade into the selected AR blade to the stop.

■ **Note:**

The AR blade should rotate freely after attached to the Screwdriver. This is essential for the insertion of the AR blade. Otherwise, the AR blade should be removed and discarded.

Instrument



8. Insertion Of AR Blade

Insert both AR Blade and Screwdriver for AR Blade over the $\Phi 3.2$ Guide Wire through the Protection Sleeve. The particular shape of the AR blade requires it to be aligned with the Protection Sleeve for insertion.

Hold the black handle of the Screwdriver and manually insert the blade over the Guide Wire as far as possible into the femoral head.
Slightly blow the Screwdriver for AR Blade with the Hammer until the Screwdriver reaches the sleeve.

■ **Note:**

It is very important to insert the AR blade to the stop so the Screwdriver has to reach the sleeve. Do not use unnecessary force when inserting the AR blade.

Use image intensification to check the position of the AR blade.



SURGICAL STEPS

9. Locking Of AR Blade

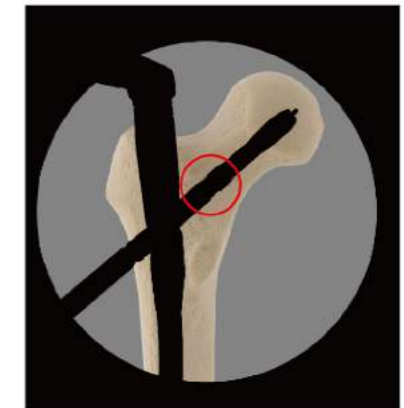
Turn the Screwdriver clockwise to the stop (note <lock> marking on the handle). The AR blade is now locked. Do not tighten too much.



Verify AR blade locking intra operatively. The AR blade is locked if all gaps are closed.

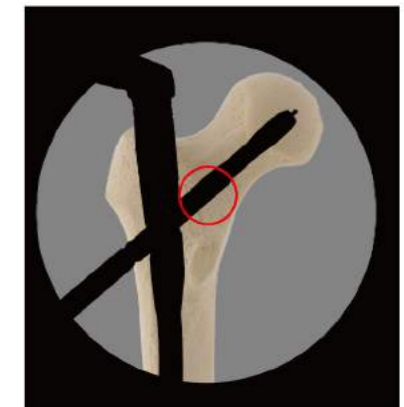
■ **Note:**

If the AR blade cannot be locked, remove it and replace it by a new AR blade (see implant removal, point 1)



(AR Blade is in unlocked state)

The AR blade is locked.



(AR Blade is in locked state)

Remove the Screwdriver for AR Blade. Remove and dispose of the Guide Wire.



SURGICAL STEPS

Release and remove the Protection Sleeve and the Buttress Nut by pressing the button on the clamp device of the Aiming Arm.



Distal locking

Distal locking Of Short Nails (170mm/200mm/240mm)

1. Selecting Distal Locking Aiming Arm

Static distal locking or dynamic distal locking can be performed by using different Aiming Arms.

Note:

Distal locking for short nails described in this surgical technique is using 4.5mm locking screw for 9.3mm nail. For nails of other sizes, please refer to the table below:



Distal locking of short nails		
Nail Dia.	9.3mm	10mm/11mm/12mm
Distal color	Blue	Dark Golden
Locking screw	4.5mm(Blue)	5.0mm(Dark Golden)
Drill bit	267340 Drill Bit, Φ 4.0mm	269360 Drill Bit, Φ 4.3mm
Drill sleeve	267200 Drill Sleeve 4.0	269370 Drill Sleeve 4.3

SURGICAL STEPS

2a. Option A: Static Distal Locking

Insert the sleeve assembly (Outer Sleeve for Distal Locking Screw {267190}, Drill Sleeve 4.0 {267200} and Trocar, Φ 4.0mm {267210}) through the static hole of the Aiming Arm. Make a stab incision and make a blunt separation of the soft tissue. Advance the Φ 4.0 Trocar to the bone. Remove the Trocar.

Use the Drill Bit, Φ 4.0mm (267340) to drill through both cortices. The tip of the drill bit should protrude by 2mm to 4mm.

Determine the position of the drill bit after both cortices are drilled through.

Ensure that the drill sleeve is pressed firmly to the near cortex and read the measurement from the calibrated drill bit at the back of the drill sleeve. This measurement corresponds to the appropriate length of the distal locking screw. Remove the Drill Bit and the Drill Sleeve.

Note:

Always make sure that no diastasis has occurred intraoperative before beginning distal locking. Diastasis can cause delayed healing.






Always ensure that the connection between the AR nail, Insertion Handle and Aiming Arm is good. Otherwise, drilling for the distal locking screw can damage the AR nail.



Optional Instrument

Remove the Drill Bit and Drill Sleeve after both cortices are drilled through. Advance the Depth Gauge for Distal Locking Screw (267220) through the Outer Sleeve and through both cortices. Draw back the hook until it engages in the opposite cortex. Read the measurement from the Depth Gauge. Make sure the locking screw with proper length is selected.

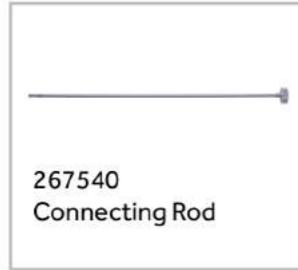
Instrument

 267190 Outer Sleeve for Distal Locking Screw	 267200 Drill Sleeve 4.0	 267210 Trocar, Φ 4.0mm	 267340 Drill Bit, Φ 4.0mm
 267220 Depth Gauge for Distal Locking Screw			

SURGICAL STEPS

Assemble Screwdriver for Distal Locking Screw (267230) and locking screw with the help of Connecting Rod (267540). Insert a locking screw until the screw tip protrudes the opposite cortex for 1mm to 2mm. Rotate the Connecting Rod anticlockwise and remove the Screwdriver and the Outer Sleeve.

Instrument



2b. Option B: Dynamic Distal Locking

Remove Aiming Arm 130° for Static Locking and mount the Aiming Arm 130° for Dynamic Locking (269440) on the Insertion Handle. Proceed as described in point 2a. for dynamic locking.

Instrument



SURGICAL STEPS

Distal locking for long nails (length: 320mm-440mm)

Distal locking of long nails can be performed free hand or with special targeting devices provided.

1. Assembly Of The Distal Targeting Devices

Remove the black Aiming Arm 130° for Static Locking. Attach Proximal Aiming Bar for Long Nail (269100) to the Handle with Proximal Bolt (269250). Then attach Distal Aiming Bar for Long Nail (269110) to the Proximal Aiming Bar with Distal Bolt (269270).

Note:

Please note the marker on the Proximal Aiming Bar showing Left and Right. Match the arrows of Proximal Aiming Bar and Distal Aiming Bar according the length of selected nail.



Instrument



Attach the Targeter (269120) to the Distal Aiming Bar with Bolt for Targeter (269260).

Instrument



SURGICAL STEPS

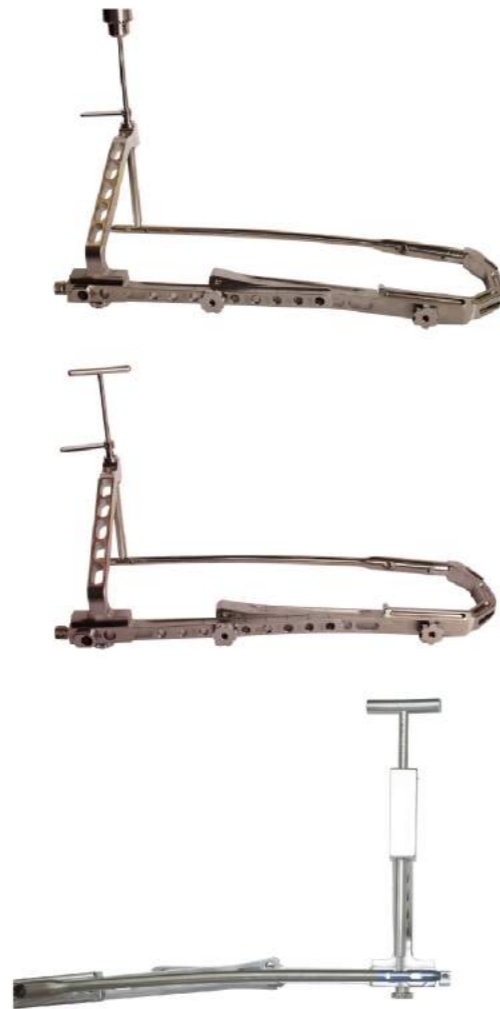
1. Position Rod Placement

Insert the assembly sleeve (Trochar Sleeve 8.1{269160} , Drill Sleeve 5.2 {269170} and Trochar 8.1 {269180}) through the hole of Targeter. Make a stab incision and blunt separation of the soft tissue. Advance the Trochar to the bone surface. Remove Trochar and Trochar Sleeve.

Insert Drill Sleeve 5.2 (269170) and use Drill Bit, Φ 5.2mm (269150) to drill until it clicks on the platform of the nail. Remove the Drill Bit. Use Position Rod Drill, Φ 5.2mm (269140) to remove the bone debris on the platform of the nail. Remove Position Rod Drill and Drill Sleeve.

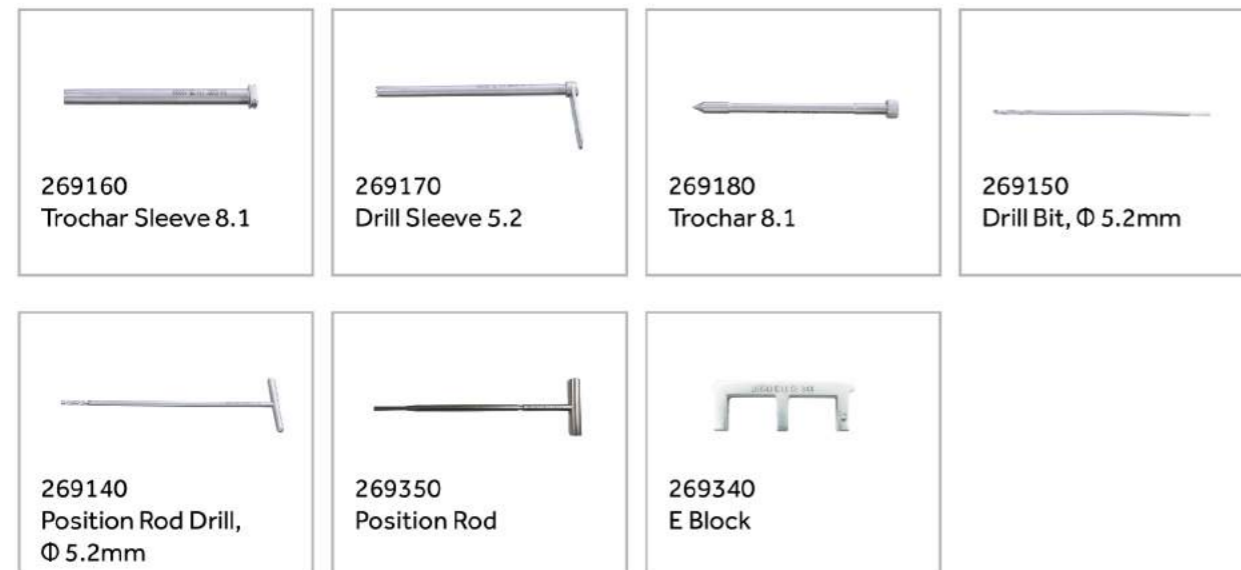
Note:

Using Position Rod Drill to remove the bone debris is essential for the accuracy of distal locking.



Insert Position Rod (269350) through the predrilled hole until it clicks on the nail. Use E Block (269340) to secure the Position Rod. A medical assistant is required to hold the Position Rod to make sure it firmly attached to the platform of the nail so that the whole construction is stable.

Instrument

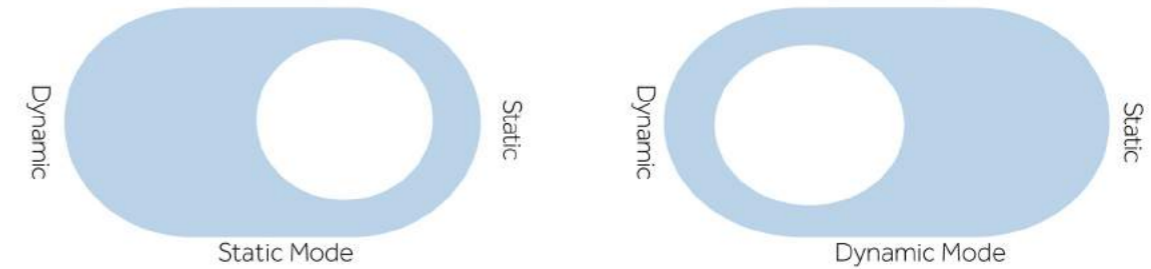


SURGICAL STEPS

3. Distal Locking

There are two holes on the Distal Aiming Bar. In the distal hole, there is an oval block with one round hole. On each side of the oval block there is a marker showing "dynamic" and "static". Place the oval block with the round hole near to the "dynamic" marker, dynamic locking can be performed. Place the oval block with the round hole near to the "static" marker, static locking can be performed.

Place the oval block with the round hole near to the "static" marker, static locking can be performed.



Note:

Distal locking for long nails described in this surgical technique is using 4.5mm locking screw for 9.5mm nail. For nails of other sizes, please refer to the table below:

Distal locking of long nails		
Nail Dia.	9.5mm/10mm(L&R)	11mm/12mm(L&R)
Distal color	Blue	Dark Golden
Locking screw	4.5mm(Blue)	5.0mm(Dark Golden)
Drill bit	267340 Drill Bit, Φ 4.0mm	269360 Drill Bit, Φ 4.3mm
Drill sleeve	267200 Drill Sleeve 4.0	269370 Drill Sleeve 4.3

Distal locking for long nails described in this surgical technique is static distal locking.

Proceed as described in distal locking for short nail 2a. to drill the hole. Do not insert the locking screw yet. Place Replacement Rod (269480) in the hole. Then place the oval block with the round hole near to the "static" marker and secure it with the bolt on the distal part of the Distal Aiming Bar.

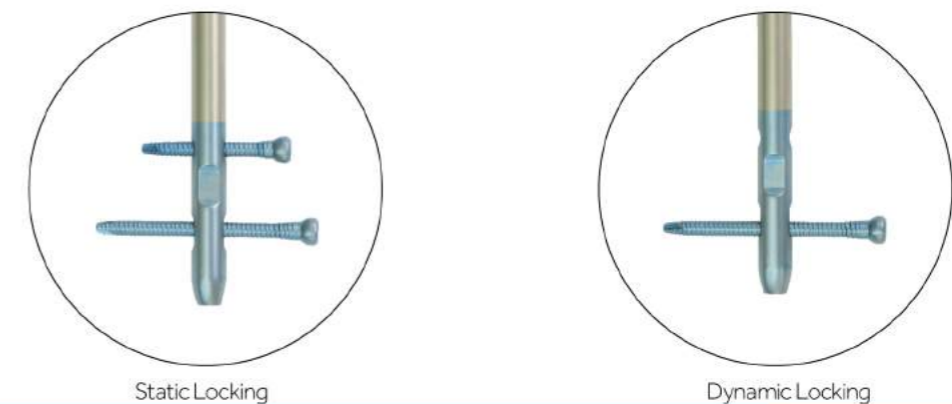
Proceed as described in 2a. insert one locking screw in the hole.

Remove the Replacement Rod in the first hole and insert one locking screw.

Verify the position of the locking screws with the help of image intensification device and remove all the targeting devices.

Note:

For dynamic distal locking, one screw insertion in the second hole is enough.



SURGICAL STEPS

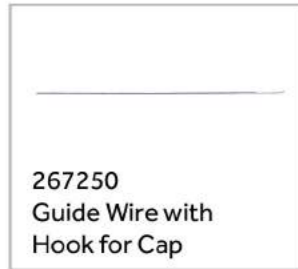
End Cap Insertion

1. Insertion Of End Cap

Insert the Guide Wire with Hook (267250) through the cap. Then guide the Screwdriver for cap, cannulated (267260) over the Guide Wire with Hook to the cap. The cap is retained automatically as soon as this connection is established. Guide the cap to the proximal end of the nail and secure it.

Remove Screwdriver (267260) for cap and Guide Wire with Hook.

Instrument



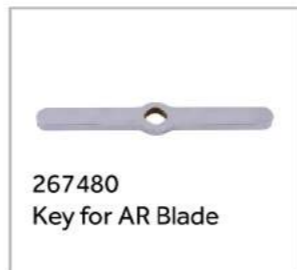
Implant Removal

1. Removal Of AR Blade

After an incision through the old scars, locate the blade by palpation or under C arm. Insert the Tip Threaded Guide Wire, Φ 3.2 mm (267390) through the blade. Push the Extraction Screw for AR Blade (267320) over the Guide Wire and use gentle pressure to turn it anticlockwise into the blade (note <unlock> marking). Use Slotted Hammer (267310) blows to remove the blade.

Use the Key for AR Blade (267480) to remove the blade from the Extraction Screw if necessary.

Instrument



SURGICAL STEPS

2. Removal Of The Cap

Insert the Screwdriver, Hexagonal (267330) into the cap and turn it anticlockwise to remove the cap.

Instrument



3. Removal Of The Locking Screw And Nail

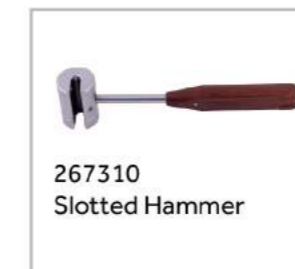
Before removal of the locking screw, assemble the Extraction Screw for Nail (267300) with the nail and secure it firmly. Remove the locking screw with Screwdriver for Distal Locking Screw

Extract the nail by applying gentle blows with the Slotted Hammer (267310).

Cleaning

Use Cleaning Stylet (267290) to clean cannulated instruments if necessary.

Instrument



IMPLANTS

Product Information

Short nail

Code	Products Description	Size	Material	Distal Locking Screw
32805017	NeoGen AR Nail	9.3x170mm	TA	4.5mm
32805020	NeoGen AR Nail	9.3x200mm	TA	4.5mm
32805024	NeoGen AR Nail	9.3x240mm	TA	4.5mm
32803017	NeoGen AR Nail	10x170mm	TA	5.0mm
32803020	NeoGen AR Nail	10x200mm	TA	5.0mm
32803024	NeoGen AR Nail	10x240mm	TA	5.0mm
32804017	NeoGen AR Nail	11x170mm	TA	5.0mm
32804020	NeoGen AR Nail	11x200mm	TA	5.0mm
32804024	NeoGen AR Nail	11x240mm	TA	5.0mm
39591117	NeoGen AR Nail	12x170mm	TA	5.0mm
39591120	NeoGen AR Nail	12x200mm	TA	5.0mm
39591124	NeoGen AR Nail	12x240mm	TA	5.0mm

Long nail(Left&Right)

Code(Left)	Code(Right)	Size	Material	Distal Locking Screw
32820232	32820132	9.5x320mm	TA	4.5mm
32820234	32820134	9.5x340mm	TA	4.5mm
32820236	32820136	9.5x360mm	TA	4.5mm
32820238	32820138	9.5x380mm	TA	4.5mm
32820240	32820140	9.5x400mm	TA	4.5mm
32820242	32820142	9.5x420mm	TA	4.5mm
32820244	32820144	9.5x440mm	TA	4.5mm
32821232	32821132	10x320mm	TA	4.5mm
32821234	32821134	10x340mm	TA	4.5mm
32821236	32821136	10x360mm	TA	4.5mm
32821238	32821138	10x380mm	TA	4.5mm
32821240	32821140	10x400mm	TA	4.5mm
32821242	32821142	10x420mm	TA	4.5mm
32821244	32821144	10x440mm	TA	4.5mm
32822232	32822132	11x320mm	TA	5.0mm
32822234	32822134	11x340mm	TA	5.0mm
32822236	32822136	11x360mm	TA	5.0mm
32822238	32822138	11x380mm	TA	5.0mm
32822240	32822140	11x400mm	TA	5.0mm
32822242	32822142	11x420mm	TA	5.0mm
32822244	32822144	11x440mm	TA	5.0mm
32823232	32823132	12x320mm	TA	5.0mm
32823234	32823134	12x340mm	TA	5.0mm
32823236	32823136	12x360mm	TA	5.0mm
32823238	32823138	12x380mm	TA	5.0mm
32823240	32823140	12x400mm	TA	5.0mm
32823242	32823142	12x420mm	TA	5.0mm
32823244	32823144	12x440mm	TA	5.0mm

Cap

Code	Products Description	Material
32806000	End Caps	TA

For sterile products, please add "R" to the current product code. For example, 32805017R.



IMPLANTS

AR blade

Code	Products Description	Size	Material
32801070	NeoGen AR Blade	10.3x70mm	TA
32801075	NeoGen AR Blade	10.3x75mm	TA
32801080	NeoGen AR Blade	10.3x80mm	TA
32801085	NeoGen AR Blade	10.3x85mm	TA
32801090	NeoGen AR Blade	10.3x90mm	TA
32801091	NeoGen AR Blade	10.3x95mm	TA
32801092	NeoGen AR Blade	10.3x100mm	TA
32801093	NeoGen AR Blade	10.3x105mm	TA
32801094	NeoGen AR Blade	10.3x110mm	TA
32801095	NeoGen AR Blade	10.3x115mm	TA
32801096	NeoGen AR Blade	10.3x120mm	TA

Locking screw

Code	Products Description	Size	Material	Color
33112025	NeoGen Locking Screws	5.0x26mm	TA	Dark Golden
33112030	NeoGen Locking Screws	5.0x30mm	TA	Dark Golden
33112035	NeoGen Locking Screws	5.0x35mm	TA	Dark Golden
33112040	NeoGen Locking Screws	5.0x40mm	TA	Dark Golden
33112045	NeoGen Locking Screws	5.0x45mm	TA	Dark Golden
33112050	NeoGen Locking Screws	5.0x50mm	TA	Dark Golden
33112055	NeoGen Locking Screws	5.0x55mm	TA	Dark Golden
33112060	NeoGen Locking Screws	5.0x60mm	TA	Dark Golden
33112065	NeoGen Locking Screws	5.0x65mm	TA	Dark Golden
33112070	NeoGen Locking Screws	5.0x70mm	TA	Dark Golden
33112075	NeoGen Locking Screws	5.0x75mm	TA	Dark Golden
33112080	NeoGen Locking Screws	5.0x80mm	TA	Dark Golden
33112085	NeoGen Locking Screws	5.0x85mm	TA	Dark Golden
33112090	NeoGen Locking Screws	5.0x90mm	TA	Dark Golden
33112091	NeoGen Locking Screws	5.0x95mm	TA	Dark Golden
33112092	NeoGen Locking Screws	5.0x100mm	TA	Dark Golden
33112093	NeoGen Locking Screws	5.0x105mm	TA	Dark Golden
33112094	NeoGen Locking Screws	5.0x110mm	TA	Dark Golden
33111025	NeoGen Locking Screws	4.5X26mm	TA	Blue
33111030	NeoGen Locking Screws	4.5X30mm	TA	Blue
33111035	NeoGen Locking Screws	4.5X35mm	TA	Blue
33111040	NeoGen Locking Screws	4.5X40mm	TA	Blue
33111045	NeoGen Locking Screws	4.5X45mm	TA	Blue
33111050	NeoGen Locking Screws	4.5X50mm	TA	Blue
33111055	NeoGen Locking Screws	4.5X55mm	TA	Blue
33111060	NeoGen Locking Screws	4.5X60mm	TA	Blue
33111065	NeoGen Locking Screws	4.5X65mm	TA	Blue
33111070	NeoGen Locking Screws	4.5X70mm	TA	Blue
33111075	NeoGen Locking Screws	4.5X75mm	TA	Blue
33111080	NeoGen Locking Screws	4.5X80mm	TA	Blue
33111085	NeoGen Locking Screws	4.5X85mm	TA	Blue
33111090	NeoGen Locking Screws	4.5X90mm	TA	Blue

For sterile products, please add "R" to the current product code. For example, 32805017R.



INSTRUMENTS

NeoGen AR Nail System Instruments List

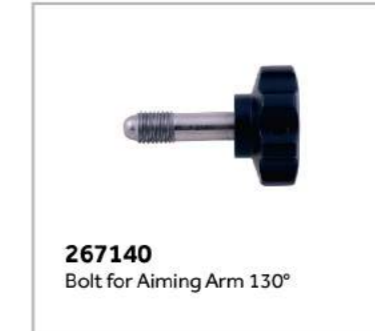
NeoGen AR Nail Instrument Set:269900

Code	Product Description
267120	InsertionConnectingRod
267130	InsertionConnector
267140	BoltforAimingArm130°
267150	ProtectionSleeveforARBlade
267160	TrocarSleeve3.2
267170	Trocar,Φ3.2mm
267180	DirectMeasuringDeviceforGuideWireΦ3.2mm
267190	OuterSleeveforDistalLockingScrew
267200	DrillSleeve4.0
267210	Trocar,Φ4.0mm
267220	DepthGaugeforDistalLockingScrew
267230	ScrewdriverforDistalLockingScrew
267240	Screwdriver,HexagonalwithSphericalHead
267250	GuideWirewithHookforCap
267260	ScrewdriverforCap,Cannulated
267270	ExtendedRod,Cannulated
267290	CleaningStylet
267300	ExtractionScrewforNail
267310	SlottedHammer
267320	ExtractionScrewforARBlade
267330	Screwdriver,Hexagonal
267340	DrillBit,Φ4.0mm
267350	ScrewdriverforARBlade
267360	ReamerforARBlade
267370	CannulatedDrillBitforARBlade
267390	TipThreadedGuideWire,Φ3.2mm
267400	Stopper,Φ10mm
267410	CombinationWrench
267450	Hammer
267460	ButtressNut
267470	TissueProtector
267480	KeyforARBlade
267510	SlottedHammerGuideforARBlade
267520	RadiographicRuler
267530	CannulatedAwl
267540	ConnectingRod













Code	Product Description
267560	GuideWire,Φ3.2mm
269100	ProximalAimingBarforLongNail
269110	DistalAimingBarforLongNail
269120	Targeter
269140	PositionRodDrill,Φ5.2mm
269150	DrillBit,Φ5.2mm
269160	TrocharSleeve8.1
269170	DrillSleeve5.2
269180	Trochar8.1
269190	BallTipGuideWire2.5
269200	Reducer
269210	Wrench,SW5forBolt
269240	GuideWireHolder
269250	ProximalBolt
269260	BoltforTargeter
269270	DistalBolt
269280	ReamerShaft
269290	Reamer,Φ9mm
269300	Reamer,Φ10mm
269310	Reamer,Φ11mm
269320	Reamer,Φ12mm
269330	Reamer,Φ13mm
269340	EBlock
269350	PositionRod
269360	DrillBit,Φ4.3mm
269370	DrillSleeve4.3
269380	WrenchforStopper
269390	Stopper, Φ4.3mm
269400	InsertionHandle
269410	AimingArm130°forStaticLocking
269420	ConnectingScrew
269430	T-HandlewithQuickCoupling
269440	AimingArm130°forDynamicLocking
269450	EntryReamer,Φ17.0mm
269460	ProtectionSleeve
269470	GuideSleeve17
269480	ReplacementRod

Please confirm with your sales representative for final product list.













INSTRUMENTS















INSTRUMENTS

 <p>267230 Screwdriver for Distal Locking Screw</p>	 <p>267240 Screwdriver, Hexagonal with Spherical Head</p>	 <p>267250 Guide Wire with Hook for Cap</p>
 <p>267260 Screwdriver for Cap, Cannulated</p>	 <p>267270 Extended Rod, Cannulated</p>	 <p>269420 Connecting Screw</p>
 <p>267290 Cleaning Stylet</p>	 <p>267300 Extraction Screw for Nail</p>	 <p>267310 Slotted Hammer</p>
 <p>267320 Extraction Screw for AR Blade</p>	 <p>267330 Screwdriver, Hexagonal</p>	 <p>267340 Drill Bit, Ø 4.0mm</p>













INSTRUMENTS

 <p>267350 Screwdriver for AR Blade</p>	 <p>267360 Reamer for AR Blade</p>	 <p>267370 Cannulated Drill Bit for AR Blade</p>
 <p>269450 Entry Reamer, Ø 17.0mm</p>	 <p>267390 Tip Threaded Guide Wire, Ø 3.2 mm</p>	 <p>267400 Stopper, Ø 10mm</p>
 <p>267410 Combination Wrench</p>	 <p>269410 Aiming Arm 130° for Static Locking</p>	 <p>269440 Aiming Arm 130° for Dynamic Locking</p>
 <p>267460 Buttress Nut</p>	 <p>267470 Tissue Protector</p>	 <p>267480 Key for AR Blade</p>

INSTRUMENTS

 <p>269400 Insertion Handle</p>	 <p>267510 Slotted Hammer Guide for AR Blade</p>	 <p>267520 Radiographic Ruler</p>
 <p>267530 Cannulated Awl</p>	 <p>267540 Connecting Rod</p>	 <p>269430 T-Handle with Quick Coupling</p>
 <p>269100 Proximal Aiming Bar for Long Nail</p>	 <p>269110 Distal Aiming Bar for Long Nail</p>	 <p>269120 Targeter</p>
 <p>269140 Position Rod Drill, Ø 5.2mm</p>	 <p>269150 Drill Bit, Ø 5.2mm</p>	 <p>269160 Trochar Sleeve 8.1</p>

INSTRUMENTS

 <p>269170 Drill Sleeve 5.2</p>	 <p>269180 Trochar 8.1</p>	 <p>269190 Ball Tip Guide Wire 2.5</p>
 <p>269200 Reducer</p>	 <p>269210 Wrench, SW5 for Bolt</p>	 <p>269240 Guide Wire Holder</p>
 <p>269250 Proximal Bolt</p>	 <p>269260 Bolt for Targeter</p>	 <p>269270 Distal Bolt</p>
 <p>269280 Reamer Shaft</p>	 <p>269290 Reamer, Ø 9mm</p>	 <p>269300 Reamer, Ø 10mm</p>

INSTRUMENTS



INSTRUMENTS

